

How to Use American Community Survey (ACS) Geodatabase Files

March 10, 2021

Dial-in (For Audio): 1-877-918-2514 (Passcode: 4253419)

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U.S. Census Bureau

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Esri, Inc.



Slides available at:

census.gov/programs-surveys/acs/news/events/acs-geodatabase-webinar.html

The American Community Survey

Outline

- **American Community Survey (ACS) basics**
- About the geodatabase files
- Accessing and downloading the geodatabase files
- Using metadata tables to identify full descriptions
- Joining feature class to tables
- Resources for learning more
- Questions

The American Community Survey

The Foundation

The American Community Survey is on the leading edge of survey design, continuous improvement, and data quality

- The nation's most current, reliable, and accessible data source for local statistics on critical planning topics such as age, children, veterans, commuting, education, income, and employment
- Surveys **3.5 million** addresses and informs over **\$675 billion** of Federal government spending each year
- Covers **40+ topics**, supports over **300** evidence-based Federal government uses
- Three key annual data releases:
 - 1-year Estimates (for large populations)
 - 1-year Supplemental Estimates (for small populations)
 - 5-year Estimates (for very small populations)

The image shows the front cover of the American Community Survey questionnaire booklet. At the top right is the number 13191010. The U.S. Census Bureau logo is on the top left, followed by the title 'The American Community Survey'. A green box in the upper center contains the text: 'This booklet shows the content of the American Community Survey questionnaire.' Below this is a 'Start Here' section with two options: 'Respond online today at: <https://respond.census.gov/acs>' or 'Complete this form and mail it back as soon as possible.' A 'Your response is required by law' section explains that the survey is conducted by the U.S. Census Bureau and that responses are required by law. It also includes a phone icon and text: 'If you need help or have questions about completing this form, please call 1-800-354-7271.' Below this is the 'Test Telephone (TTY): Call 1-800-582-8330.' and a Spanish version: '¿NECESITA AYUDA? Llame sin cargo al número al 1-877-833-5625.' For more information, it says to visit <https://www.census.gov/acs>. On the right side, there are instructions for filling out the form: 'Please print the name and telephone number of the person who is filling out this form. We will only contact you if needed for official Census Bureau business.' This is followed by fields for 'Last Name', 'First Name', 'MI', 'Area Code', and 'Number'. Below these are instructions for 'How many people are living or staying at this address?' with bullet points: 'INCLUDE everyone who is living or staying here for more than 2 months.', 'INCLUDE yourself if you are living here for more than 2 months.', 'INCLUDE anyone else staying here who does not have another place to stay, even if they are here for 2 months or less.', and 'DO NOT INCLUDE anyone who is living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment.' There is a field for 'Number of people'. At the bottom right, it says 'Fill out pages 2 - 7 for everyone, including yourself, who is living or staying at this address for more than 2 months. Then complete the rest of the form.' The bottom of the cover has the text 'Form ACS-18INFO(2021)' and 'OMB No. 0607-0810' and 'OMB No. 0607-0836'. A barcode is at the bottom left.

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Availability of Data Products

Estimated Population of Geographic Area	1-Year Estimates	1-Year Supplemental Estimates	5-Year Estimates
65,000 or more	X	X	X
20,000 to 64,999		X	X
Less than 20,000			X
Release Date	September 2021	October 2021	December 2021

census.gov/programs-surveys/acs/news/data-releases.html

The American Community Survey

How is the American Community Survey Different from a Census?

	ACS	Census
<i>Purpose</i>	Sample estimates	Official counts
<i>Collects</i>	Detailed social, economic, housing, and demographic characteristics	Basic demographics
<i>Produces</i>	Population and housing characteristics	Population and housing totals
<i>New Data Every</i>	Year	10 years
<i>Data Reflect</i>	Period of time	Point in time

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Data Collection Process

SELF-RESPONSE



NONRESPONSE FOLLOWUP



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ACS Content

POPULATION		HOUSING
SOCIAL Ancestry Citizenship Citizen Voting Age Population Disability Educational Attainment Fertility Grandparents Language Marital Status Migration School Enrollment Veterans	DEMOGRAPHIC Age Hispanic Origin Race Relationship Sex	Computer & Internet Use Costs (Mortgage, Taxes, Insurance) Heating Fuel Home Value Occupancy Plumbing/Kitchen Facilities Structure Tenure (Own/Rent) Utilities Vehicles Year Built/ Year Moved In
	ECONOMIC Class of Worker Commuting Employment Status Food Stamps (SNAP) Health Insurance Hours/Week, Weeks/Year Income Industry & Occupation	

The American Community Survey

Table/Profile Numbering

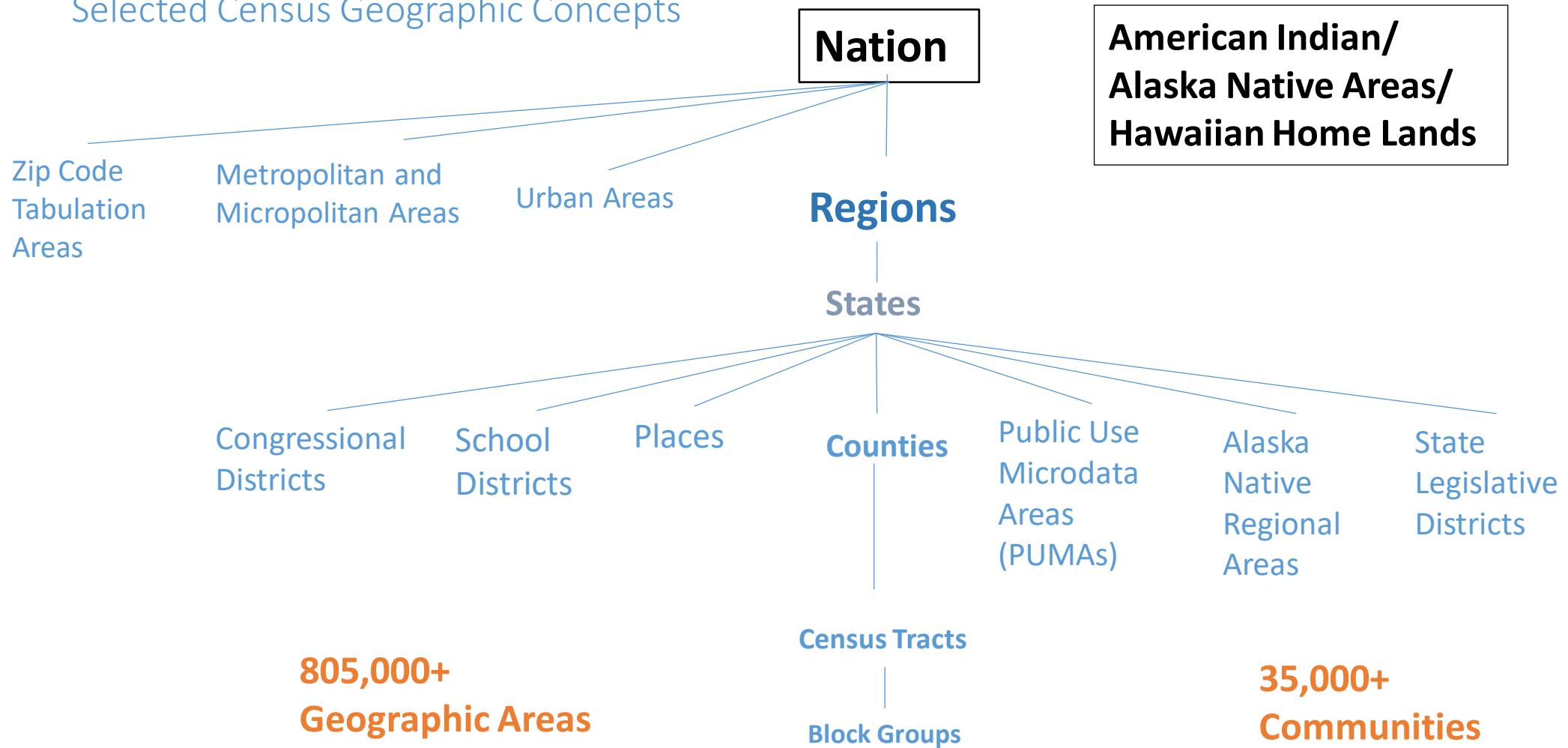
B06004APR

- B=Data Product Type (Detailed Table)
- 06=Subject (Place of Birth)
- 004=Sequential Number (2 or 3 digits)
- A=Race/Hispanic Origin (White Alone)
- PR=For Puerto Rico Geographies Only

census.gov/programs-surveys/acs/guidance/which-data-tool/table-ids-explained.html

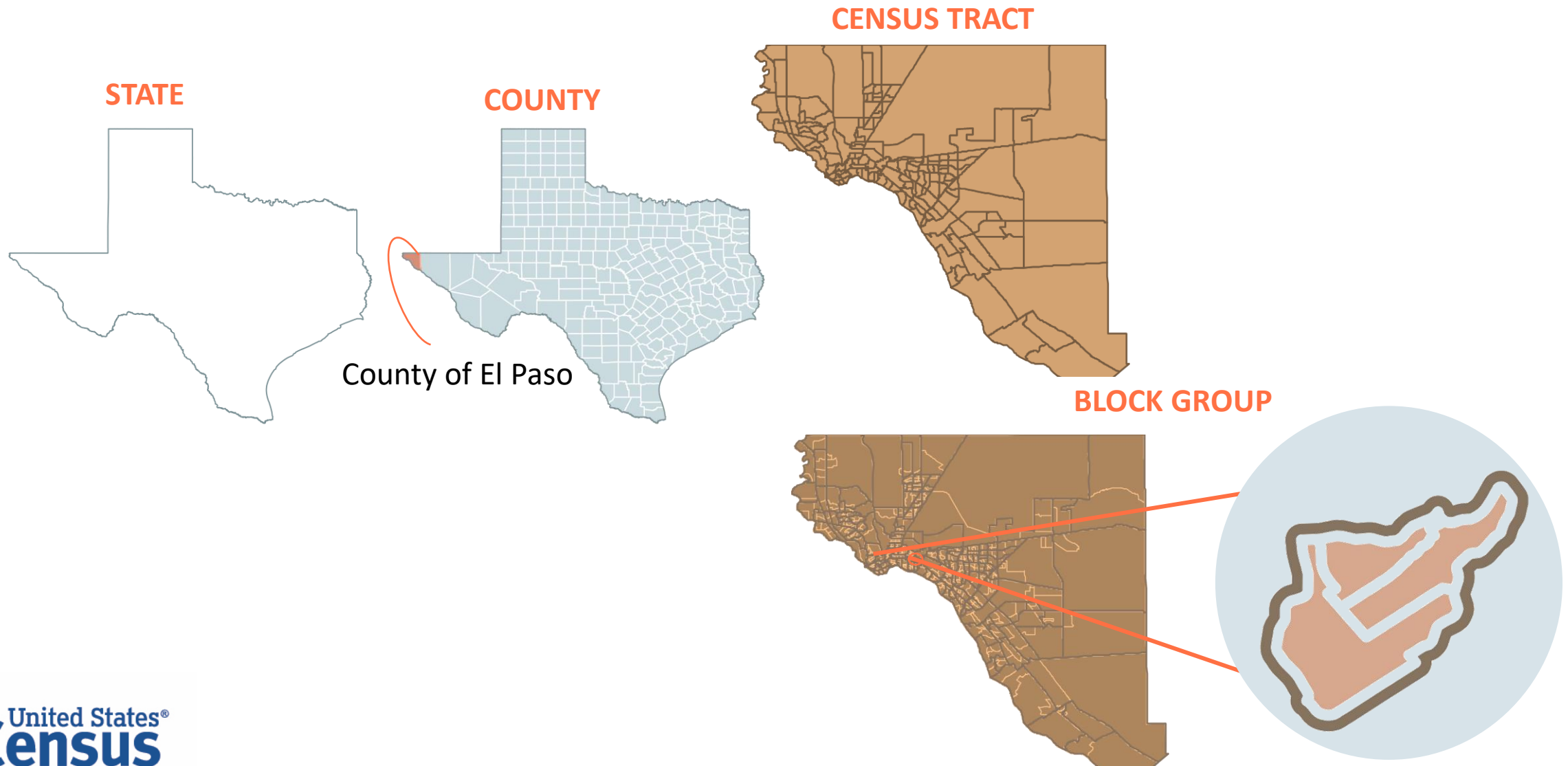
The American Community Survey

Selected Census Geographic Concepts



The American Community Survey

Selected Census Geographic Concepts



The American Community Survey

Outline

- American Community Survey (ACS) basics
- **About the geodatabase files**
- Accessing and downloading the geodatabase files
- Using metadata tables to identify full descriptions
- Joining feature class to tables
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- Questions

What is a Geodatabase?

- A “TIGER/Line with Selected Demographic and Economic Data” geodatabase file contains geographic boundary data pre-joined with demographic and economic data variables.
- A geodatabase is a geographic file that can only be used in Esri ArcGIS and related software.
- Files are released in the Spring following the ACS 5-year estimate file release.

The American Community Survey

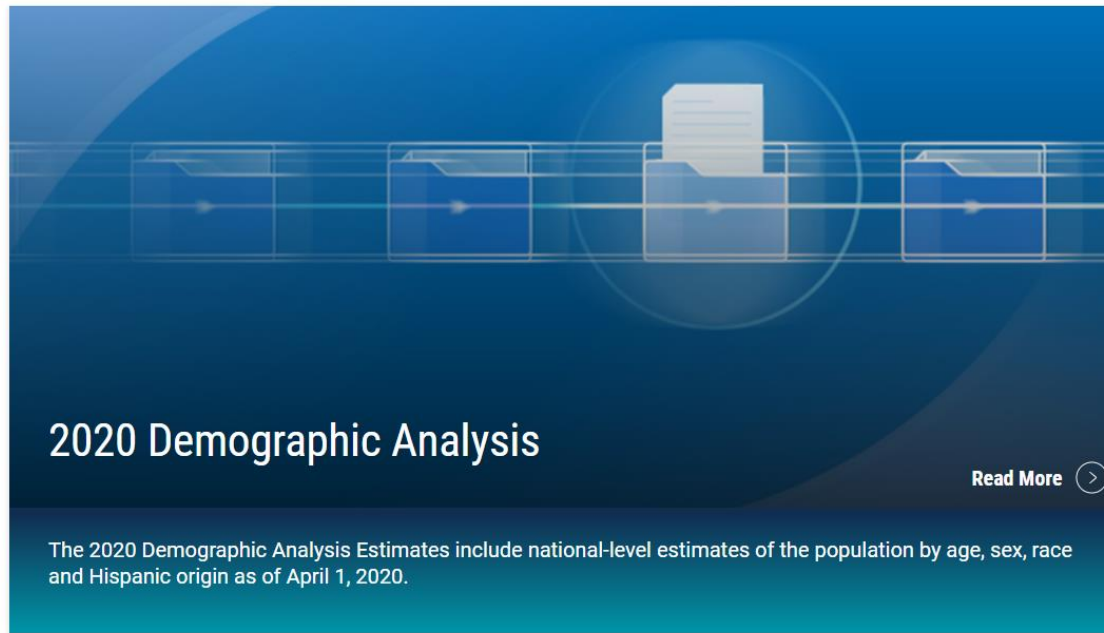
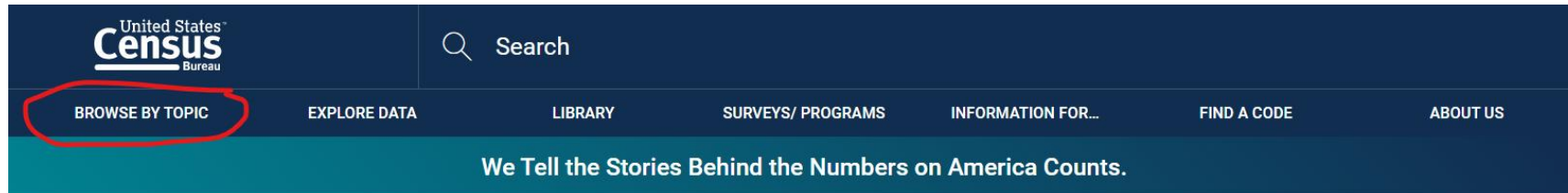
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Where do I find these files?


- Go to Census.gov.
- Click Browse by Topic – Geography.
- Choose “Geographies”.
- Click on 2018.
- Choose TIGER/Line with Selected Demographic and Economic Data.
- Choose the geography that you are interested in and download, or download from the ftp site.

Where do I find these files?



U.S. CENSUS BUREAU ECONOMIC INDICATORS		
New Residential Construction		
January 2021 Report	1,580,000	↓*
Released 8:30 AM EST, 2/18/21	Housing starts	-6.0%
Business Inventories		
December 2020 Report	\$1,971.7 B	↑
Released 10:00 AM EST, 2/17/21		0.6%
Advance Monthly Retail Sales		
January 2021 Report	\$568.2 B	↑
Released 8:30 AM EST, 2/17/21		5.3%

Where do I find these files?



Search

BROWSE BY TOPICEXPLORE DATALIBRARYSURVEYS/ PROGRAMSINFORMATION FOR...FIND A CODEABOUT US

// Census.gov > Our Surveys & Programs > Geography Program

GEOGRAPHY PROGRAM

About this Program

Data

Geographies

Guidance for Geography Users

Library

Technical Documentation

Updates




Contact Us

< Back to Our Surveys & Programs

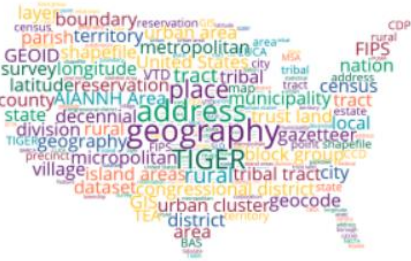
Geography Program

Geography is central to the work of the Census Bureau, providing the framework for survey design, sample selection, data collection, tabulation, and dissemination. Geography provides meaning and context to statistical data.


[Read More](#)




AboutInteractive MapsGeographies



Where do I find these files?



 Search

[BROWSE BY TOPIC](#)[EXPLORE DATA](#)[LIBRARY](#)[SURVEYS/ PROGRAMS](#)[INFORMATION FOR...](#)[FIND A CODE](#)[ABOUT US](#)

// [Census.gov](#) > [Our Surveys & Programs](#) > [Geography Program](#) > **Geographies**

GEOGRAPHY PROGRAM
[Reference Maps](#)
[Reference Files](#)
[Mapping Files](#)
[Back to Geography Program](#)

Geographies

Here you will find most of our geographic products including maps and geospatial data for legal and statistical boundaries.

Geography Reference Maps

Maps that show the boundaries and names (or other identifiers) of geographic areas for which the Census Bureau tabulates statistical data.

Geography Reference Files

Material such as place codes or identifiers required for some uses of our geospatial products. Reference files also may detail legal changes to places or areas.

Geography Mapping Files
Products that contain geospatial information in a format that makes possible maps creation in geographic information systems.

Where do I find these files?

Mapping File

TIGER/Line Geodatabases

View the available TIGER/Line geodatabases from the Geography program.

Mapping File

TIGER/Line Shapefiles

View all the available mapping files from the Geography program.

Mapping File

TIGER/Line with Selected Demographic and Economic Data

View the available TIGER/Line geodatabases with Selected Demographic and Economic Data from the Geography program.

Where do I find these files?

// Census.gov > Census Mapping Files > TIGER/Line with Selected Demographic and Economic Data

GEOGRAPHIES

Mapping Files

Mapping Tools

Reference Files

Reference Maps

< [Back to Census Mapping Files](#)



TIGER/Line with Selected Demographic and Economic Data

A limited set of TIGER/Line Shapefiles are available pre-joined with data in geodatabase and shapefile format.

American Community Survey 5-Year Estimates — Geodatabase Format

2018 2017 2016 2015 2014 2013 2012 2011 [MORE](#) ▾

2018

2014 - 2018 Detailed Tables

Related Information

TECHNICAL DOCUMENTATION
[TIGER/Line with Selected Demographic and Economic Data Record Layouts](#)

[TIGER/Line Shapefiles and TIGER/Line Files Technical Documentation](#)

[Summary File Documentation](#)

Where do I find these files?

Block Group

Select a State



Census Tract

Delaware DE



County Subdivision

Select a State



Documentation

Technical Documentation

TIGER/Line with Selected Demographic and Economic Data Record Layouts

Record layouts for the TIGER/Line with Selected Demographic and Economic Data contain the short name and a full description of each cell.

User note on [Congressional and State Legislative Districts in Geographic Products](#).

Unzip Downloaded File

- You will need to unzip the downloaded geodatabase using a zipping software such as WinZIP.
- Save the unzipped files where you can find them to use in ArcGIS.

Geodatabase Technical Document

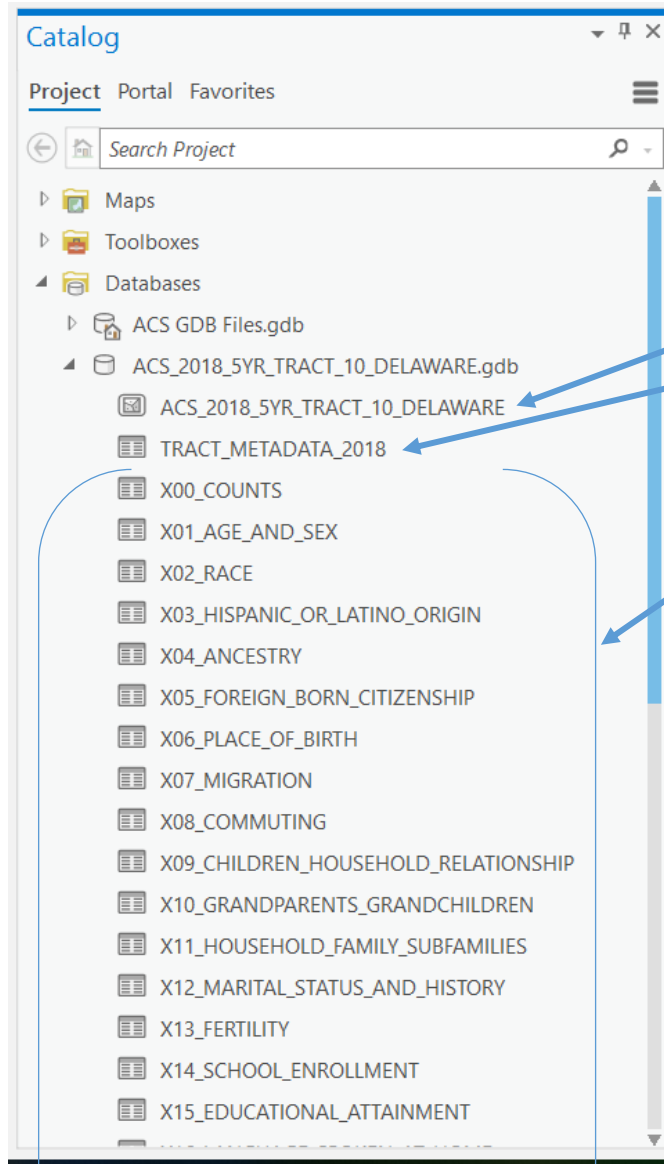
- Technical Documentation for the “TIGER/Line with Selected Economic and Demographic Data” files is available at the bottom of the page where you downloaded the files, or on the right-hand side under Related Information.

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Connect to the geodatabase



Add items to map:

1. Polygon feature class
2. Metadata table
3. Attribute table(s)

Use metadata table to apply field aliases

<https://www.esri.com/arcgis-blog/products/arcgis-pro/data-management/bulk-assign-field-aliases/>

Catalog

Project Portal Favorites

Search Project

- Maps
- Toolboxes
- Databases
 - ACS GDB Files.gdb
 - ACS_2018_5YR_TRACT_10_DELAWARE.gdb
- Layouts
- Styles
- Tasks
- Folders
 - ACS GDB Files
 - .backups
 - ImportLog
 - ACS GDB Files.gdb
 - ACS_2018_5YR_TRACT_10_DELAWARE.gdb
 - ACS GDB Files.tbx
 - FieldAliasesTools.pyt**
 - Bulk Assign Aliases**
 - FieldAliasesTools.BulkAssignAliases.pyt.xml
 - FieldAliasesTools.Tool.pyt.xml
- Locators

Geoprocessing

Bulk Assign Aliases

Parameters Environments

Input attribute table
X01_AGE_AND_SEX

Input lookup table
TRACT_METADATA_2018

Short name field
Short_Name

Long name field
Full_Name

X01_AGE_AND_SEX

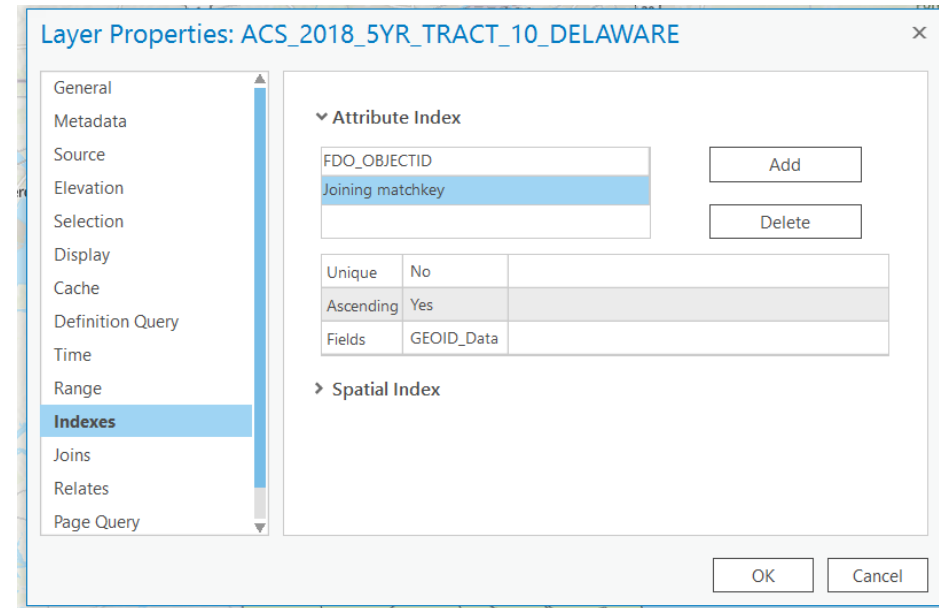
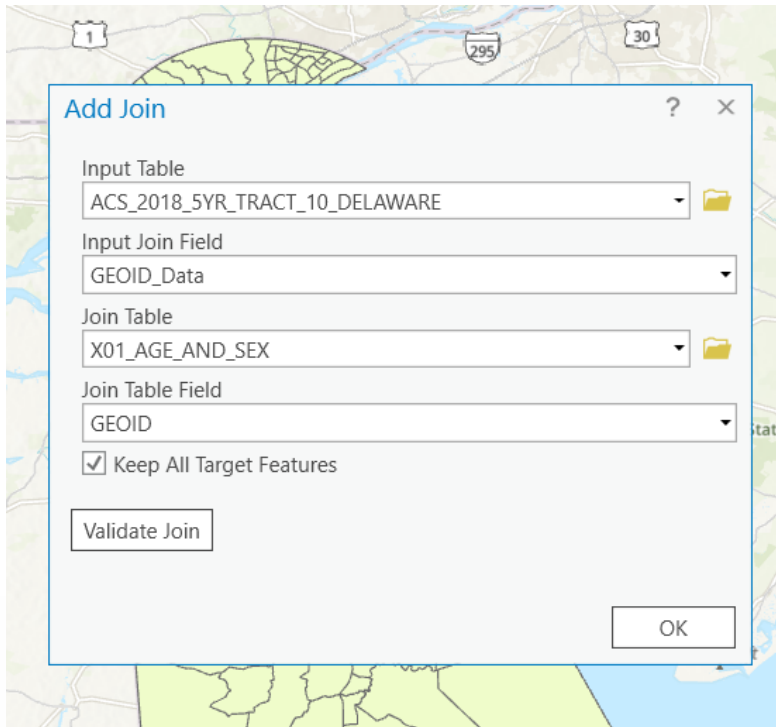
Field: Add Calculate Selection: Select By Attributes Zoom To Switch Clear Delete Copy

SEX BY AGE: Female: 60 and 61 years: Total Population -- (Estimate)	
104	
71	
154	
138	
75	
29	
138	
36	
76	
21	
80	
43	
72	
59	

- ☒ Show Field Aliases
- Show All Fields
- Reset Field Order
- Fields View
- ☒ Show domain and subtype descriptions
- Contingent Values
- Joins and Relates
- Related Data
- Select related records
- Find and Replace
- Go to row number
- Export

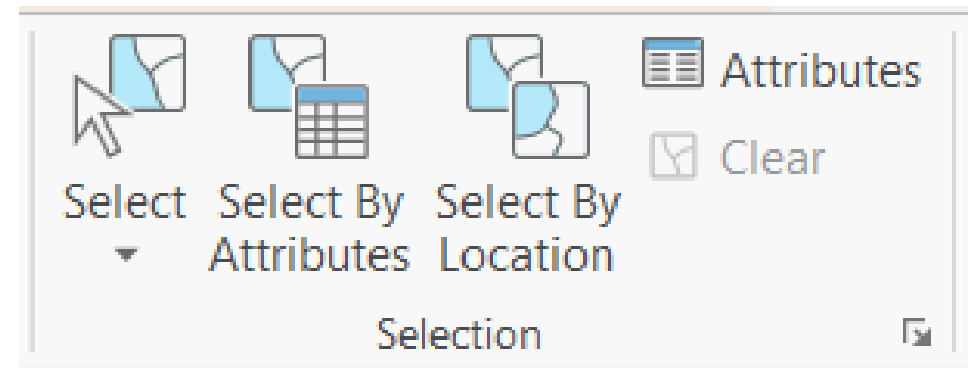
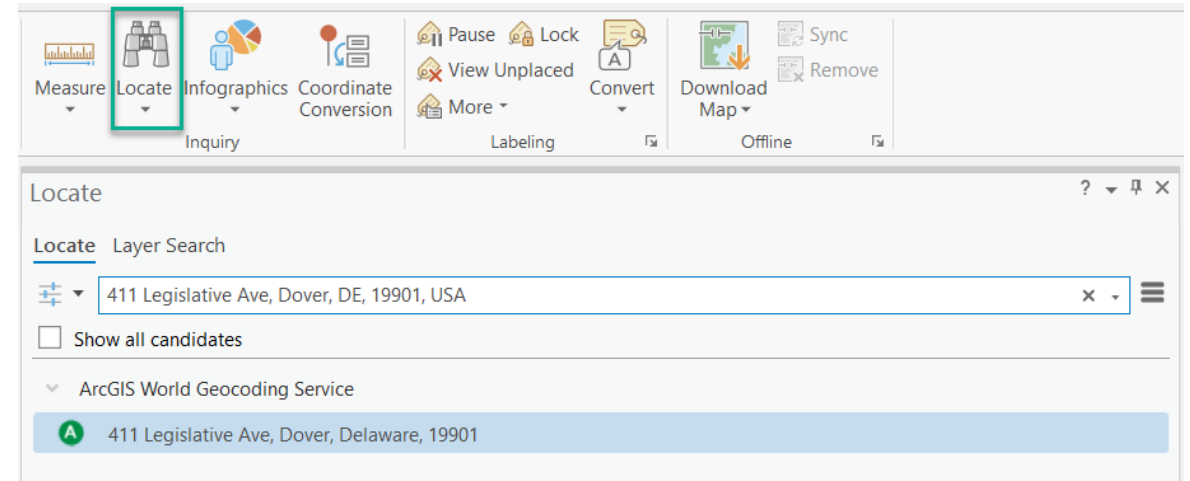
Join attribute table to polygons

- GEOID in attribute tables matches to GEOID_Data in feature layer
- Add an index on polygon layer for improved performance



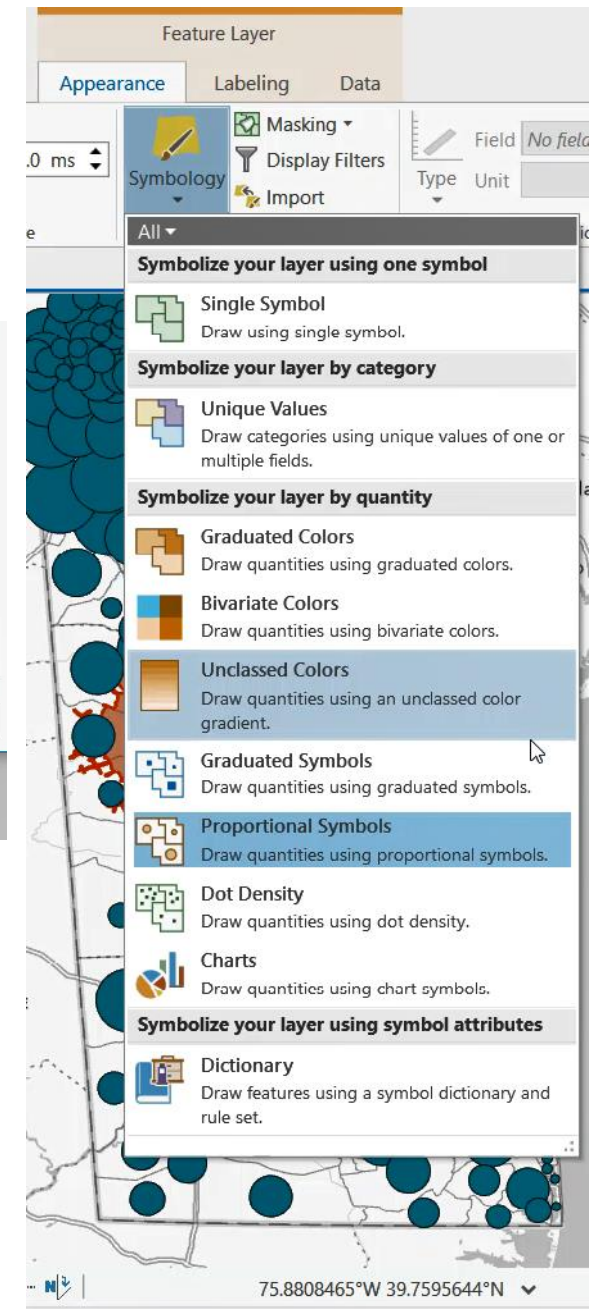
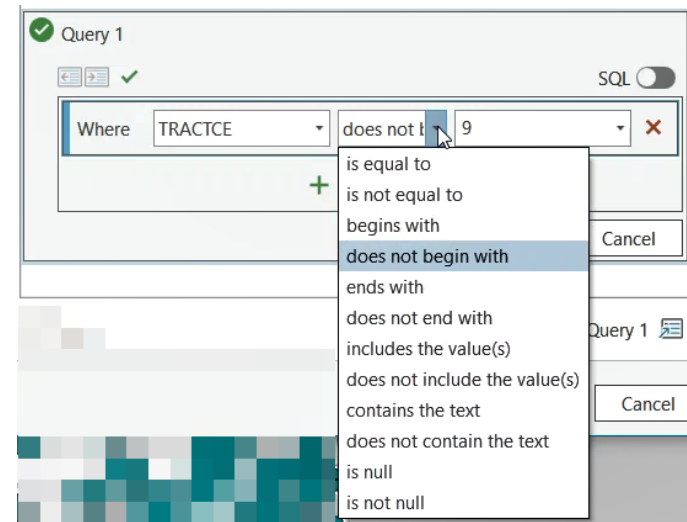
Tips and Tricks for Common Workflows

- Export features to create a permanent layer from your join
- Use Locate tool to search an address and see what tract it's in
- Select by attributes to identify areas that meet specified criteria
- Select by location using your polygons to see what tracts/block groups are contained within your areas



Tips and Tricks for Mapping

- Set definition query so that water tracts are not displayed
- Symbolize counts and integers with size, percentages and rates with color
- Unclassed color ramps let the data breathe
- Use a neutral basemap that won't compete with your colors




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The American Community Survey

Main Page



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// [Census.gov](#) > [Our Surveys & Programs](#) > [American Community Survey \(ACS\)](#)

AMERICAN COMMUNITY SURVEY (ACS)

About the Survey

Respond to the Survey

News & Updates

Data

Guidance for Data Users

Geography & ACS

Technical Documentation


Methodology

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Operations and Administration

Contact Us

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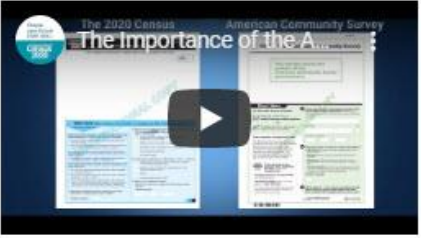



Respond to the ACS

Learn how

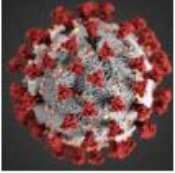
American Community Survey (ACS)

The [American Community Survey](#) (ACS) helps local officials, community leaders, and businesses understand the changes taking place in their communities. It is the premier source for detailed population and housing information about our nation.






How do I respond to the ACS?



ACS data help with COVID-19 response efforts



Should I respond to both the ACS and 2020 Census?

Data

2018 Data Release

Learn more about 2018 ACS data releases, including the latest release of new 2014-2018 ACS 5-year PUMS files and Variance Replicate Estimates, as well as the new 2018 ACS 1-year Supplemental

The American Community Survey

Technical Documentation Page

The screenshot shows the 'Technical Documentation' page for the American Community Survey (ACS) on the United States Census Bureau website. The page has a dark blue header with the Census Bureau logo and a search bar. Below the header is a navigation bar with links: BROWSE BY TOPIC, EXPLORE DATA, LIBRARY, SURVEYS/ PROGRAMS, INFORMATION FOR..., FIND A CODE, and ABOUT US. The main content area has a breadcrumb trail: // Census.gov > Our Surveys & Programs > American Community Survey (ACS) > Technical Documentation. On the left is a sidebar with a list of links: AMERICAN COMMUNITY SURVEY (ACS), Code Lists, Definitions, and Accuracy, User Notes, Errata Notes, Data Suppression, Table & Geography Changes, Table Shells and Table List, Summary File Documentation, PUMS Documentation, Variance Replicate Tables Documentation, Race/Ethnicity and American Indian & Alaska Native Documentation, and a back link to the ACS page. The main content area features a large heading 'Technical Documentation' with social media icons (Facebook, Twitter, LinkedIn) and a paragraph explaining that the ACS provides documentation to assist users. Below this are sections for 'Code Lists, Definitions, and Accuracy', 'User Notes', 'Errata Notes', and 'Table & Geography Changes', each with a brief description. On the right side, there are two sections: 'Related Information' with links to 'American Community Survey Data', 'Share Your ACS Data Story', and 'Contact Us'; and 'You May Be Interested In' with sections for 'RELATED TOPICS' (Contact Us), 'AROUND THE BUREAU' (Email Updates), and 'MOST POPULAR' (Share Your ACS Data Story). At the bottom left of the main content area is a 'Respond to the ACS' button with the text 'Learn how'.

United States[™]
Census
Bureau

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// Census.gov > Our Surveys & Programs > American Community Survey (ACS) > Technical Documentation

AMERICAN COMMUNITY SURVEY (ACS)

Code Lists, Definitions, and Accuracy

User Notes

Errata Notes

Data Suppression

Table & Geography Changes

Table Shells and Table List

Summary File Documentation

PUMS Documentation

Variance Replicate Tables Documentation

Race/Ethnicity and American Indian & Alaska Native Documentation

< Back to American Community Survey (ACS)

Respond to the ACS
Learn how

Technical Documentation

The American Community Survey provides various documentation to assist users with our data releases. Click on the links below to learn more about these resources.

Code Lists, Definitions, and Accuracy

View the detailed codes and definitions for variables, statistical testing, and an explanation of sample design, methodology, and accuracy for the ACS.

User Notes

Learn more about issues impacting the American Community Survey, including design, collection, production, and data release.

Errata Notes

Learn more about errors and/or corrections related to the American Community Survey.

OCTOBER 01, 2016

Data Suppression

Learn more about why certain American Community Survey estimates are not available due to data suppression.

Table & Geography Changes

Learn more about changes to tables and geography for each American Community Survey data release.

Related Information

[American Community Survey Data](#)

[Share Your ACS Data Story](#)

[Contact Us](#)

You May Be Interested In

RELATED TOPICS

[Contact Us](#)

AROUND THE BUREAU

[Email Updates](#)

MOST POPULAR

[Share Your ACS Data Story](#)

census.gov/programs-surveys/acs/technical-documentation.html

The American Community Survey

Data Tell Stories. Tell us Yours!

Share Your ACS Data Story

We want to hear about how you use American Community Survey (ACS) data!

Did you or your organization use the ACS to make an important decision, hire a new employee, open/expand a business, etc? If so, we are eager to learn more about your story. Share your story by completing the fields below to help us showcase the value of the ACS.

Need help getting started? Check out featured examples from our current collection of [ACS data stories](#).

* Indicates a required field

Your Story *

Tell us how you use ACS data.

Outcome *

Tell us about any outcomes or decisions that you or your organization have made based on ACS data. For example: selecting a location for a \$250 million department store distribution center that brought 4,000 jobs to Denver, CO.

Your story

Your data details

Your outcome



- Purpose:
 - Improve understanding of the value and utility of ACS data.
 - Promote information sharing among data users about key ACS data issues and applications.
- Includes users group website and online community
- Webinars and special sessions at professional meetings planned
- Membership is free and open to all interested ACS data users
- ACS Data Users Conference: May 18-20th (**Save the Date!**)

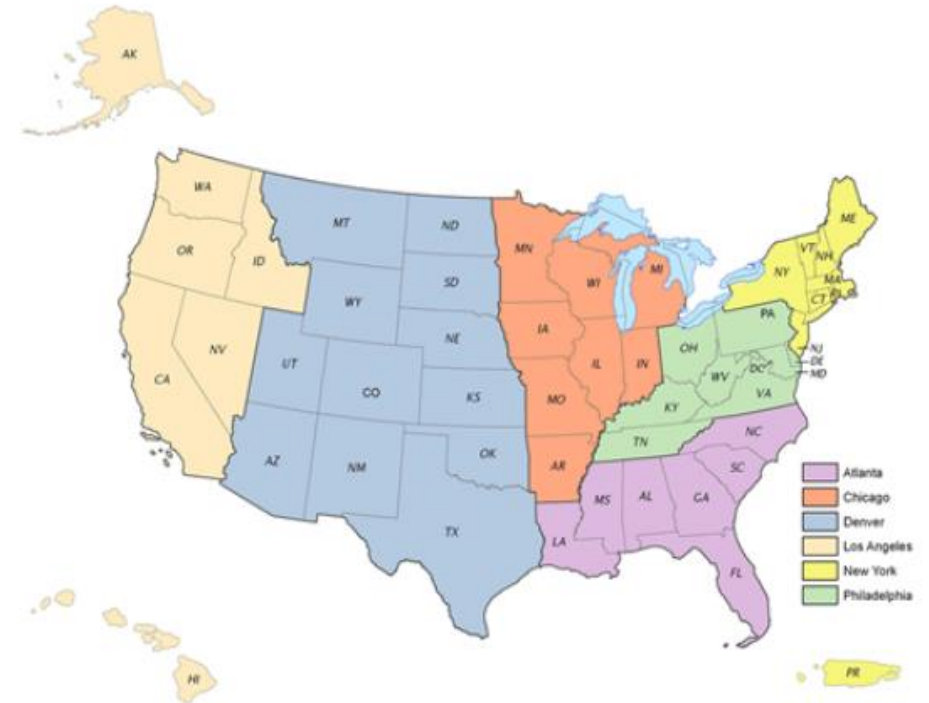
acsdatacommunity.prb.org

The American Community Survey

Need Local Stats?

- **FREE Assistance Near You!**
Our regional data staff can help you access local statistics from the ACS or offer training to help build your skills.
- **Contact us at:**

1-844-ASK-DATA
(1-844-275-3282)
census.askdata@census.gov



The American Community Survey

Continue the Conversation



Sign up for and manage alerts at
<https://public.govdelivery.com/accounts/USCENSUS/subscriber/new>



Social media: @uscensusbureau
#ACSdata



More information online:
census.gov/acs
census.gov/geo

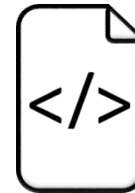


ACS:
acso.users.support@census.gov

Geography:
geo.geography@census.gov



Census Customer Service Center
800-923-8282




Source Us:
*U.S. Census Bureau's [YYYY – YYYY] American
Community Survey
[1/5]-year [estimates/statistics/data release]*

Bulk-Assign Aliases - Script Tool

Bulk Assign Aliases - Script Tool

Overview



Python toolbox containing a script tool that can bulk-apply field aliases from a lookup table in ArcGIS Pro.

Geoprocessing Sample by [esri_demographics](#)

Created: Mar 3, 2021 Updated: Mar 3, 2021 Number of Downloads: 0

Download

Description

Details

ArcGIS Blog post containing more information: [Bulk-assign field aliases from a lookup table in ArcGIS Pro](#).

Accompanying [stand-alone script](#) [here](#).

Size: 2 KB

★★★★★



Script tool available for download:
<https://www.arcgis.com/home/item.html?id=c238f18683644e94bf39b6e441a2f09f>

ArcGIS Pro

Update attribute field aliases from a lookup table in ArcGIS Pro

Data Management

March 02, 2021



Diana Lavery
Gonzalo Espinoza

Data dictionaries. Lookup tables. Codebooks. While the name for a dataset's documentation might vary across professions and data sources, the need for data documentation is universal! A common way to store this type of metadata is in a lookup table or data dictionary. At its simplest, a data dictionary is a two-column table in which one field is the field name, and another is the corresponding definition of what that field name represents.

This type of information can be stored on each field as the alias. An alias is an alternative name for a field providing a more user-friendly description of the content. Aliases are much more accommodating than field names, as they can contain up to 255 characters, including

Blog post with more information:
<https://www.esri.com/arcgis-blog/products/arcgis-pro/data-management/bulk-assign-field-aliases/>



Esri Community

A global community of Esri users where you can find solutions, share ideas, and collaborate to solve problems with GIS

community.esri.com

ArcGIS Pro

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ArcGIS Living Atlas of the World

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ArcGIS Living Atlas Ideas

2200 3